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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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Manganese, Monthly

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## MANGANESE IN MAY 1996

In May, reported consumption of manganese ore containing 35% or more manganese, exclusive of that at iron and steel plants, was 38,000 metric tons, which was about 6% more than that of the previous month, according to the U.S. Geological Survey. This brought the year-to-date total to 177,000 tons. These figures increase to 42,500 and 199,000 when estimates for annual respondents are added on the basis of 1994 data. Corresponding industry stocks of ore at the end of the month were estimated as 320,000 tons, which includes an estimate for annual respondents based on 1994 data. This was a marked increase of about 47% in comparison with the corresponding figure for stocks at the end of April. (Data for the most recent 13 months are graphed on page 3.)

This report contains data on domestic consumption and stocks of manganese ferroalloys and metals for the January through March quarter of 1996 (table 8).

### Notices

Early availability of foreign trade statistics via FaxBack: The April trade data appearing in this report were placed on FaxBack in preliminary form as of June 25. The FaxBack document number for these preliminary tables was 420204.

Availability of manganese monthly report via the World Wide Web: Monthly, quarterly, and annual Minerals Information publications are now available through the World Wide Web (WWW). These publications include the Mineral Commodity Summaries, Minerals Yearbook, Mineral Industry Surveys, and Metal Industry Indicators. To access Minerals Information publications, visit the Minerals Information home page at: <http://minerals.er.usgs.gov/minerals>

Foreign trade data for May will appear in a subsequent report. The data for April tabulated in this report signified an unusually large volume of imports, as the total for manganese units imported was the greatest for any month since at least the early 1980's. Among the leading sources of categories of material received in comparatively large amounts in April were South Africa for ore, ferromanganese, and silicomanganese, and Australia for ore and silicomanganese.

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Prepared by the Metals Section and the Data Collection and Coordination Section, August 29, 1996.

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The Defense Logistics Agency (DLA), U.S. Department of Defense, reported for May two cash disposals from the National Defense Stockpile. One, under DLA-MET-101, was for 560 tons of electrolytic manganese metal, which was split between ATI Alloys Inc., McKees Rocks, PA, and Elkem Metals, Marietta, OH. The other, under DLA-ORES-071, was for 907 tons of metallurgical-grade ore, all to Cameron Chemical Inc., Chesapeake, VA.

Sale in the United States of alkaline manganese or carbon-zinc batteries into which mercury had been intentionally introduced was prohibited by the Mercury-Containing and Rechargeable Battery Management Act (Public Law 104-142) that became effective May 13. This Act contained the exception that alkaline-manganese button cells could contain up to 25 milligrams of mercury per cell. Title I of this Act excluded rechargeable alkaline batteries from requirements imposed on other rechargeable batteries such as those employing nickel and cadmium. An aim of the Act was to encourage recycling or proper disposal of the latter type of battery.

According to The Tex Report in its issues of April 30 and June 4, the International Manganese Institute (Paris, France) has established an Electrolytic Products Division (EPD), which the IMI membership approved on May 20 at a meeting in South Africa. The present objective of the EPD is to maintain data on world production and sales of manganese-containing electrolytic products, which are metal and manganese dioxide (EMD). The firms reported as initially participating in the EPD program account for most of the world's production of metal and EMD except for the significant quantities produced in China.

TABLE 1  
SELECTED U.S. FOREIGN TRADE IN MANGANESE 1/

(Metric tons, manganese content) 2/

	Imports for consumption			Exports		
	Ore and dioxide	Ferroalloy and metal	Total	Ore	Ferroalloy and metal	Total
1995:						
April	34,200	51,500	85,700	52	1,790	1,840
January-April	56,200	158,000	214,000	3,510	7,010	10,500
1996:						
January	8,860 3/	47,100 3/	56,000	386	1,540	1,930
February	1,410 3/	36,200 3/	37,600	1,620	1,670	3,290
March	14,400 3/	46,900 3/	61,300	466	1,610	2,080
April	32,500	61,400 3/	93,900	1,250	1,760	3,010
Total	57,100	192,000	249,000	3,730	6,580	10,300

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ As reported except as estimated for imports of manganese dioxide and manganese waste and scrap and for exports from gross weights.

3/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 2  
U.S. IMPORTS FOR CONSUMPTION OF SILICOMANGANESE IN APRIL 1996 1/

(Metric tons)

Source	Gross weight	Mn content	Customs value	Year to date		
				Gross weight	Mn content	Customs value
Argentina	--	--	--	4,850	3,150	\$3,250,000
Australia	9,050	6,070	\$6,250,000	18,600	12,400	13,300,000
France	3,730	2,450	2,630,000	8,730	5,730	6,160,000
Georgia	--	--	--	1,260	884	701,000
India	8,460	5,540	5,170,000	22,700	14,700	14,300,000
Kazakstan	1,920	1,250	1,150,000	4,000	2,290	2,300,000
Macedonia	5,490	3,700	2,370,000	9,480	6,440	4,210,000
Mexico	1,100	720	805,000	6,580	4,290	4,590,000
Norway	899	503 2/	790,000	1,450	837	1,310,000
Romania	--	--	--	8,160	5,480	4,850,000
Russia 2/	1,200	778	597,000	1,200	778	597,000
South Africa	13,000	8,540	8,820,000	33,400	22,900	21,300,000
Spain	--	--	--	801	498	739,000
Venezuela	--	--	--	7,600	4,940	5,500,000
Total	44,800	29,600	28,600,000	129,000	85,400	83,000,000
Total, general imports	43,600	28,800	28,000,000	132,000	87,900	85,000,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ All or part of these data have been referred to the Bureau of the Census for verification.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF FERROMANGANESE IN APRIL 1996 1/

(Metric tons)

Source	Gross weight	Mn content	Customs value	Year to date		
				Gross weight	Mn content	Customs value
Low carbon:						
Bangladesh	--	--	--	28	24	\$16,700
Belgium	4 2/	3 2/	\$2,330 2/	16	13	9,230
Brazil	--	--	--	20	17	39,000
Canada	42	34	53,000	42	34	53,000
Italy	254	229	418,000	1,250	1,130	2,020,000
Japan	180	162	286,000	1,680	1,370	1,760,000
Norway	66	53	127,000	108	87	181,000
South Africa	180	166	310,000	1,000	916	1,690,000
Total, low carbon	727	648	1,200,000	4,150	3,590	5,760,000
Total, general imports of low carbon	723	644	1,190,000	4,140	3,590	5,760,000
Medium carbon, 1%-2% C:						
Brazil	24	18	32,400	1,330	1,060	1,200,000
China	500	400	400,000	4,010	3,230	3,100,000
France	--	--	--	2,500	2,040	1,960,000
Japan	4,500	3,630	3,590,000	10,000	8,190	7,800,000
Mexico	1,050	845	868,000	9,500	7,640	7,880,000
South Africa	120	95	103,000	1,910	1,550	1,690,000
Total, m.c., 1%-2% C	6,190	4,990	4,990,000	29,200	23,700	23,600,000
Total, general imports of m.c., 1%-2% C	6,190	4,990	4,990,000	29,200	23,700	23,600,000
High carbon:						
Australia	3,790	2,890	\$1,700,000	14,300	10,600	5,570,000
Brazil	--	--	--	6,000	4,290	2,420,000
France	11,300	8,840	5,380,000	34,300	26,900	16,600,000
Mexico	--	--	--	6	5	3,650
Norway	--	--	--	17	14	15,400
South Africa	17,700	13,800	8,110,000	43,100	33,700	19,600,000
Total, high carbon	32,700	25,600	15,200,000	97,700	75,500	44,200,000
Total, general imports of high carbon	32,700	25,600	15,200,000	97,700	75,500	44,200,000
Grand total	39,700	31,200	21,400,000	131,000	103,000	73,600,000
Grand total, general imports	39,700	31,200	21,400,000	131,000	103,000	73,600,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 4  
U.S. IMPORTS 1/ OF MANGANESE ORE (20% OR MORE MN) IN APRIL 1996 2/

(Metric tons)

Source	20% - 47% Mn		47% or more Mn		Total	
	Gross weight	Mn content	Gross weight	Mn content	Gross weight	Mn content
Australia	--	--	37,400	18,300	37,400	18,300
Mexico	800	282	--	--	800	282
South Africa	--	--	27,000	12,900	27,000	12,900
Total	800	282	64,400	31,100	65,200	31,400
Year to date:						
Australia	--	--	37,400	18,300	37,400	18,300
Gabon	--	--	51,000	19,900	51,000	19,900
Mexico	3,560	1,300	20	14	3,580	1,310
South Africa	--	--	27,000	12,900	27,000	12,900
Total	3,560	1,300	115,000	51,100	119,000	52,400

1/ Quantities for general imports and imports for consumption are identical.

2/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE DIOXIDE AND MANGANESE METAL IN APRIL 1996 1/

(Metric tons, gross weight)

Source	Manganese dioxide				Manganese metal			
	Quantity	Customs value	Year to date		Unwrought		Other	
			Quantity	Customs value	Quantity	Year to date	Quantity	Year to date
Australia	1,370	\$1,940,000	4,860	\$6,970,000	--	--	--	--
Austria	--	--	2	\$4,080	--	--	--	--
Belgium	55	99,600	340	610,000	--	--	--	--
Brazil	--	--	254	349,000	--	--	--	--
Canada	--	--	5	7,940	--	--	(2/)	6
China	--	--	--	--	--	220	--	--
France	--	--	--	--	--	--	--	31
Germany	--	--	26	114,000	--	--	12	74
Ireland	360	533,000	2,110	2,940,000	--	--	--	--
Japan	5	9,440	6	16,400	--	--	--	--
South Africa	--	--	153	240,000	560	2,700	41	260
Ukraine	--	--	--	--	--	20	--	--
United Kingdom	--	--	200	280,000	--	--	40	152
Total	1,790	2,590,000	7,950	11,500,000	560	2,940	93	522
Total, general imports	1,790	2,590,000	8,000	11,600,000	578	3,150	93	522

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Note: Imports for consumption of metallic manganese waste and scrap totaled 43 tons, of which 38 tons was from Canada and 5 tons was from Mexico to give a year to date total of 103 tons.

Source: Bureau of the Census.

TABLE 6  
U.S. EXPORTS OF MANGANESE ORE (20% OR MORE MN), FERROMANGANESE,  
SILICOMANGANESE, AND MANGANESE METAL BY COUNTRIES OF DESTINATION IN APRIL 1996 1/

(Metric tons, gross weight)

	Manganese ore		Ferromanganese, 2% or less C		Silicomanganese		Manganese metal 2/	
	April	Year to date	April	Year to date	April	Year to date	April	Year to date
Australia	--	142	--	--	2	2	--	--
Belgium	696	696	--	--	--	--	--	--
Bolivia	--	3	--	--	--	--	--	--
Brazil	--	--	--	12	--	--	14	43
Canada	544	1,890	532	2,140	409	2,540	90	320
China	--	2,360	--	--	--	--	--	--
Colombia	--	--	--	12	--	--	--	--
El Salvador	--	354	--	--	--	--	--	--
France	--	--	--	--	--	--	98	103
Germany	--	--	--	--	--	--	--	76
Hong Kong	--	--	--	--	--	--	--	1
India	77	77	--	--	--	--	--	--
Italy	--	--	--	--	--	--	--	8
Japan	549	549	--	--	--	--	125	281
Korea, Republic of	--	519	--	--	--	--	16	62
Mexico	71	134	22	53	8	250	50	194
Netherlands	--	--	--	--	--	133	36	233
Sweden	571	571	--	--	--	--	--	18
Trinidad and Tobago	--	159	--	--	--	--	--	--
United Kingdom	--	(3/)	--	--	--	--	156	599
Venezuela	--	--	--	4	--	--	--	--
Total	2,510	7,460	554	2,220	419	2,930	585	1,940

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes manganese-aluminum, some other alloys, and waste and scrap.

3/ Less than 1/2 unit.

Note: Exports of ferromanganese with more than 2% carbon totaled 579 tons, of which 385 tons went to Mexico and 195 tons went to Canada, to give a year to date total of 1,211 tons.

Source: Bureau of the Census.

TABLE 7  
U.S. FOREIGN TRADE IN SELECTED MANGANESE CHEMICALS IN APRIL 1996, BY CLASS 1/

Class	Gross weight (metric tons)	Value 3/ (thousands)	Principal sources and destinations: gross weight (metric tons); value (thousands) 2/	Year to date		Principal sources and destinations: gross weight (metric tons); value (thousands) 2/
				Gross weight (metric tons)	Value 3/ (thousands)	
<u>Imports for consumption:</u>						
Manganese oxides other than dioxide	38	\$61	Norway 20; \$14	323	\$796	South Africa 144; \$374
Sulfates, basket category, including manganese sulfate	1,840	1,010	Mexico 1,660; \$826	7,890	4,380	Mexico 6,390; \$3,030
Potassium permanganate	74	134	Czech Republic 36; \$69	293	545	Czech Republic 180; \$336
Manganites, manganates, and other permanganates	--	--	--	8	24	Canada 8; \$24
<u>Exports:</u>						
Manganese dioxide	184	265	Mexico 67; \$86	1,210	1,400	Canada 590; \$276
Manganese oxides other than dioxide	755	726	Canada 259; \$113	2,710	2,770	Canada 1,180; \$515
Sulfates, basket category, including manganese sulfate	1,680	1,290	Canada 1,460; \$455	7,010	4,420	Canada 5,850; \$1,860
Manganites, manganates, and other permanganates	--	--	--	--	--	--

1/ Data are rounded to three significant digits.

2/ For imports, Customs value; for exports, f.a.s. value.

Source: Bureau of the Census.

TABLE 8  
U.S. CONSUMPTION, BY END USE, AND INDUSTRY STOCKS OF  
MANGANESE FERROALLOYS AND METAL IN JANUARY THROUGH MARCH 1996 1/

(Metric tons, gross weight)

End use	Ferromanganese			Silico- manganese	Manganese metal
	High carbon	Medium and low carbon	Total		
Steel:					
Carbon	46,000	17,800	63,800	20,100	572
Stainless and heat-resisting	2,830	62	2,890	1,560	380
Full alloy	4,530	1,540	6,070	6,950	(2/)
High-strength, low-alloy	4,510	1,010	5,520	2,170	(2/)
Unspecified 3/	(4/)	(4/)	(4/)	55	121
Total steel	57,900	20,400	78,300	30,800	1,070
Cast irons	1,520	111	1,630	112	--
Superalloys	(4/)	--	(4/)	--	33
Alloys (excluding alloy steels and superalloys)	(4/)	(4/)	(4/)	W	4,240
Miscellaneous and unspecified	235	36	271	W	(5/)
Total consumption, end of period	59,600	20,600	80,200	31,000 6/	5,340
Average daily consumption rate, tons per day	655	226	881	340	59
Stocks, March 31:					
consumers and producers	21,600	7,140	28,800	14,100	3,610

W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Withheld to avoid disclosing company proprietary data; included in "Steel: Unspecified."

3/ Includes electrical and tool steel, and items indicated by (2/).

4/ Withheld to avoid disclosing company proprietary data; included in "Miscellaneous and unspecified."

5/ Withheld to avoid disclosing company proprietary data; included in "Alloys (excluding alloy steels and superalloys)."

6/ Internal evaluation indicates that silicomanganese consumption is considerably understated.